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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,026	11/21/2003	Madaline Chirica	DX01074B1K	3154

28008 7590 02/27/2007

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EXAMINER	
SEHARASEYON, JEGATHEESAN	
ART UNIT	PAPER NUMBER
1647	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/720,026	CHIRICA ET AL.	
	Examiner	Art Unit	
	Jegatheesan Seharaseyon, Ph.D	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *7 and 10-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5,6,8 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/21/03 & 6/2/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election without traverse of Group I, claims 1 (in part), 2-4, 5 (in part), 6, 8 and 9, drawn to a method of treating a human subject experiencing a physiological disorder comprising administering an effective amount of an antagonist of DCRS5 polypeptide of SEQ ID NO: 2 in the reply filed on 11/22/06 is acknowledged. Applicant also elects inflammatory bowel disorder. 7 and 10-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions of Groups II-X, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/22/2006. Therefore, claims 1, 2-6, 8 and 9 are pending and under consideration.

Priority

2. Applicant is required to update the current status of 09/853, 180 in the first paragraph of the Application.

3. Priority is granted to the filing date of 09/853, 180 (05/10/2001) because there is no disclosure in Application 60/203, 426 filed 5/10/2001 for therapeutic methods using antagonist of DCRS5.

Information Disclosure Statement

4. The IDS submitted 11/21/2003 and 6/02/2005 have been considered.

Specification

5. The use of the trademark Vector NTI Suite (p.14), Taqplus (p. 50), Pefabloc (p.54) and Sepharose (p.54) etc. have been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner, which might adversely affect their validity as trademarks.

6. The specification is objected to because it contains a blank instead of β in page 4, paragraph 14. Applicant is encouraged to check the entire specification for typographical errors.

Claim Objections

7. Claims 1 and 5 contain unelected inventions. Applicant is required to amend the claims to recite the elected invention.

8. Claims 2 and 4 will not be examined further because they are drawn to unelected inventions.

Claim Rejections - 35 USC § 112, second paragraph

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 5, 6, 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9a. Claim I is rejected as vague and indefinite in the recitation of "antagonist". There is no definition in the specification of an "antagonist". It is unclear what compounds could function as antagonist. One of skill in the art would not be able to determine which compounds act as antagonist off DCRS5. Claims 3 5, 6, 8 and 9 are rejected insofar as they are dependent on rejected claim 1.

Claim Rejections - 35 USC § 112, first paragraph

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10a.Claims 1, 3, 5, 6, 8 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the specification does not reasonably provide enablement for the method of treating a human subject experiencing a physiological disorder comprising administering an effective amount of an antagonist of DCRS5, wherein the disorder is inflammatory bowel disorder (IBD).

The test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue. See *In re Wands*, 858 F.2d at 737, 8 USPQ2d at 1404 The factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue"

include, but are not limited to: (1) the breadth of the claims; (2) the nature of the invention; (3) the state of the prior art; (4) the level of one of ordinary skill; (5) the level of predictability in the art; (6) the amount of direction provided by the inventor; (7) the existence of working examples; and (8) the quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Claims 1, 3, 5, 6, 8 and 9 are drawn to the method of treating a human subject experiencing a physiological disorder comprising administering an effective amount of an antagonist of DCRS5, wherein the disorder is inflammatory bowel disorder (IBD). Applicant has demonstrated increased expression of IL-23R (DCRS5) in psoriasis and rheumatoid arthritis (see page 56, paragraph 182 and Table 2). In addition, Applicant indicates that expression of p19 (IL-B30) was elevated in hypersensitivity pneumonitis, idiopathic pulmonary fibrosis, and in inflammatory bowel disorder (IBD), e.g., Crohn's disease (see page 56, paragraph 182 and Table 2). Further, Applicant has demonstrated using a P19 knockout (p19KO) mouse model that is deficient in IL-23 were found to resist collagen-induced arthritis (see pages 60-61 and Table 5). However, the specification as filed is insufficient to enable one skilled in the art to practice the claimed invention without an undue amount of experimentation because there is no teaching to indicate that administering an effective amount of antagonist of DCRS5 will treat inflammatory bowel disorder (IBD). Although, there is some staining of intestinal tissues (Table 3) using IL-23R antibody (24F9), there is no evidence to indicate that antagonist of DCRS5 maybe used for the treatment of IBD as claimed in the instant invention. Specifically, the specification does not teach any methods or working

examples that would indicate that antagonist of DCRS5 can be administered in any subject for the treatment of IBD.

In addition, regarding *in vivo* administration for treatment, variables such as biological stability, half-life or clearance from the blood are important parameters in achieving successful therapy. Further, there is no teaching in the specification that would indicate that antagonist of DCRS5 will have no adverse reactions upon the administration of antagonist. In addition, one skilled in the art would not be able to predict the effects of the antagonist in the regulation of DCRS5. The antagonist may not otherwise reach the target cell or tissue because of its inability to penetrate tissues or cells where its activity is to be exerted, it may be absorbed by fluids, cells and tissues where it has no effect, circulation into the target area may be insufficient to carry the antagonist, and a large enough local concentration may not be established (see Pettit et al.,). The specification provides insufficient guidance with regard to these issues and provides no working examples or evidence, which would provide guidance to one skilled in the art to predict the efficacy of the claimed methods with a reasonable expectation of success. Thus, undue experimentation would be required of one skilled in the art at the time the invention was made to practice the method of treating a human subject experiencing a physiological disorder comprising administering an effective amount of an antagonist of DCRS5, wherein the disorder is inflammatory bowel disorder (IBD).

Further, there is no teaching in the specification with respect to the various pathologies associated with the various physiological disorders including IBD that are caused by various etiologies. The usefulness of the methods of treatment recited in the

claims is tied to the usefulness of the antagonist of DCRS5 in treating various physiological disorders including IBD. In addition, the specification and the prior art have not disclosed a role for all antagonist of DCRS5 in the treatment of various physiological disorders including IBD.

If one skilled in the art is not guided as to the pathology of the various physiological disorders including IBD, then the skilled artisan is also not guided as to how to use methods for the treatment using the antagonists of DCRS5. Since, there is inadequate guidance as to the nature of the invention, it is merely an invitation to the artisan to use the current invention as a starting point for further experimentation to try various physiological disorders including IBD. In addition, because there are no working examples provided describing the treatment of various physiological disorders including IBD or disease models, which use antagonists of DCRS5, it would require an undue amount of experimentation to one of skill in the art to practice the claimed invention.

In addition, there is no guidance provided for the mechanism associated with the physiological disorders including IBD recited in the claims. While mechanism is not required, it can allow extrapolation of enablement to non-exemplified embodiments. Since applicant has not provided any working examples to teach the method of treatment a subject experiencing a physiological disorder including IBD by administering antagonist of DCRS5 either *in vitro* or *in vivo*, it would require an undue amount of experimentation to one of skill in the art to practice the invention as claimed.

Given the breadth of claims 1, 3, 5, 6, 8 and 9 in light of the unpredictability of the art as determined by the lack of working examples, the level of skill of the artisan, and

the lack of guidance provided in the instant specification and the prior art of record, it would require undue experimentation for one of ordinary skill in the art to make and use the claimed invention for a method of treatment.

10b. Claims 1,3, 5, 6, 8 and 9 are rejected under 35 U.S.C. 112, first paragraph, because the specification were it enabling for the treatment of a physiological disorder such as inflammatory bowel disorder (IBD) by the antagonists antibodies (see page 43, paragraph 0138 and page 59, Table 3), does not reasonably provide enablement for all possible antagonists of DCRS5 contemplated by the Applicant. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

Claims 1,3, 5, 6, 8 and 9 are drawn to the method of treating a human subject experiencing a physiological disorder comprising administering an effective amount of an antagonist of DCRS5, wherein the disorder is inflammatory bowel disorder (IBD). However, Applicants demonstrated increased expression of IL-23R (DCRS5) in psoriasis and rheumatoid arthritis (see page 56, paragraph 182 and Table 2). In addition, Applicant indicates that expression of p19 (IL-B30) was elevated in hypersensitivity pneumonitis, idiopathic pulmonary fibrosis, and in inflammatory bowel disorder (IBD), e.g., Crohn's disease (see page 56, paragraph 182 and Table 2). Further, Applicant has demonstrated using a P19 knockout (p19KO) mouse model that is deficient in IL-23, to indicate that this model is resistant to collagen-induced arthritis

(see pages 60-61 and Table 5). Specification also discloses that IL-23R antibody 24F9 stains small intestine tissue from Crohn's disease patient. However, the specification as filed is insufficient to enable one skilled in the art to practice the claimed invention treating with all antagonists of DCRS5 without an undue amount of experimentation because the physiological disorders including IBD could be the result of various etiologies. In addition, the disorder taught in the specification is limited to p19 knock out mouse being resistant to collagen-induced arthritis (CIA), yet the scope of the claims encompasses all antagonists of DCRS5 treating physiological disorders including IBD. The usefulness of the methods of treatment recited in the claims is tied to the usefulness of antagonists of DCRS5 in treating physiological disorders including IBD. Since, not all antagonists of DCRS5 have been demonstrated to regulate DCRS5 and treat physiological disorder including IBD, it is unclear how one skilled in the art can extrapolate the observations of the antibodies to IL-23R (24F9) staining the intestinal tissue to treat disorders. In addition, the specification and the prior art have not disclosed a role for antibodies to IL-23R intestinal inflammatory pathology.

If one skilled in the art is not guided as to the pathology of the various diseases, then the skilled artisan is also not guided as to how to use methods for the treatment using the compositions comprising these polypeptides. Since, there is inadequate guidance as to the nature of the invention, it is merely an invitation to the artisan to use the current invention as a starting point for further experimentation to try various antagonists of DCRS5 to treat physiological disorders including IBD with inflammatory pathology.

In addition, there is no guidance provided for the mechanism associated with the antagonists to DCRS5 recited in the claims. While mechanism is not required, it can allow extrapolation of enablement to non-exemplified embodiments. Since applicant has not provided any working examples for treating a subject experiencing a physiological disorder comprising administering an effective amount of an antagonist of DCRS5, wherein the disorder is inflammatory bowel disorder (IBD), it would require an undue amount of experimentation to one of skill in the art to practice the invention commensurate in scope with the claims to treat all diseases with inflammatory pathology.

Given the breadth of claims 1, 3, 5, 6, 8 and 9 in light of the unpredictability of the art as determined by the lack of working examples, the level of skill of the artisan, and the lack of guidance provided in the instant specification and the prior art of record, it would require undue experimentation for one of ordinary skill in the art to make and use the claimed invention for a method of treating physiological disorders by administering antagonists of DCRS5.

10c. Claims 1, 3, 5, 6, 8 and 9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. *This is a written description rejection.*

The specification discloses antibody (24F9) that binds to DCRS5 (page 58, paragraph 183). This meets the written description provisions of 35 USC 112, first paragraph. However, the specification does not disclose all possible antagonists of DCRS5 contemplated by the Applicant. The claims as written, however, encompass antagonists of DCRS5 which were not originally contemplated and fail to meet the written description provision of 35 USC 112, first paragraph because the written description is not commensurate in scope with the recitation of claims 1, 3, 5, 6, 8 and 9. The specification does not provide written description to support the genus encompassed by the instant claims.

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed*." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed" (*See Vas-Cath* at page 1116).

With the exception of antibody that binds DCRS5 (24F9), the skilled artisan cannot envision all the detailed chemical structure of the claimed antagonists regardless of the complexity or simplicity of the method of isolation.

Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. The polypeptide itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601, 1606 (CAFC 1993) and *Amgen Inc. V. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016. One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481, 1483. In *Fiddes v. Baird*, claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class.

Therefore, only the antibody 24F9 but not the full breadth of the claims meets the written description provision of 35 USC 112, first paragraph. The species specifically

disclosed are not representative of the genus because the genus is highly variant. As a result, it does not appear that the inventors were in possession of various polypeptide sequences set forth in claims 1, 3, 5, 6, 8 and 9.

Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 USC 112 is severable from its enablement provision. (See page 1115.) Applicants are directed to the Revised Interim Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 64, No. 244, pages 71427-71440, Tuesday December 21, 1999.

Conclusion

11. Chirica et al. (U.S. Patent No. 6, 756, 481) discloses therapeutic methods using antagonists to DCRS5 (SEQ ID NO: 2). However, the instant claims were restricted from Application No. 09/853, 180 (now U.S. Patent No. 6, 756, 481).

12. No Claims are allowable.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jegatheesan Seharaseyon, Ph.D whose telephone number is 571-272-0892. The examiner can normally be reached on M-F: 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback can be reached on 571-272-0961. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JS
Art Unit 1647,
February 13, 2007

Gegatheesan Sehgal
Patent Examiner